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CHIRURGICAL
OBSERVATIONS

RELATIVE TO THE

EPIPHORA, OR WATERY EYE,

THE

SCROPHULOUS AND INTERMITTENT
OPHTHALMY,

THE

EXTRACTION OF THE CATARACT,

AND THE

INTRODUCTION OF THE MALE CATHETER.

By JAMES WARE, SURGEON.

L O N D O N:

PRINTED FOR C. DILLY, IN THE POULTRY.

M.DCC.XCII.





P R E F A C E.

THE following observations were read at different times before the Medical Society of London. It is usual with this Society to read all papers twice, before they refer them to their Council. One of those which are here inserted, after being twice read, was ordered by the Council to be printed. The Author, however, recollecting that two papers written by him, one on the Dissipation of the Cataract, and another on the Treatment of the Gutta Serena, had been previously voted for publication, and that these would occupy a considerable part of the Society's next

9 volume;

volume; on this account declined the honour intended him; and, at the same time, he withdrew the succeeding papers, which had been read before the Society only once, with an intention to print them in the form in which they now appear. They relate to subjects of considerable importance, and he hopes they will be found not altogether useless. The last paper, on the Introduction of the Catheter, is a republication. It appeared in the second volume of the Society's Memoirs, annexed to a case of Suppression of Urine, which was occasioned by an enlargement of the Prostate Gland.

*New Bridge Street,
February 7th, 1792.*

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BY JAMES WARE, SURGEON.

The Second Edition, with Additions.

ON THE
EPIPHORA,

OR
WATERY EYE.

Read before the Medical Society of London,
Dec. 27th 1790.

BY the term Epiphora is meant, an accumulation of tears on the anterior part of the eye; in consequence of which, the person afflicted with this disorder is not only under the necessity of frequently wiping them away, but vision is injured by the morbid refraction which they produce in the rays of light that enter the pupil. This disorder may be occasioned either by a more copious secretion of tears than the puncta lachrymalia are able to absorb; or, which I believe to be its more common cause, by an obstruction in the lachrymal canal; whence

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the tears are prevented from passing freely from the eye into the nose.

It is not my design in this paper to enlarge on the manner in which the tears are produced. I shall only observe, that though they were formerly supposed to be secreted, solely, by the glandula lachrymalis, the observations of modern anatomists have given rise to an opinion, not only that a part of them transudes through the pores of the conjunctiva and cornea, but that their quantity is increased, and that their acrimony is abated, by the secretions of the caruncula lachrymalis, and the glandulæ meibomii *.

When an Epiphora is produced by a too copious secretion of tears, if it does not depend on an affection of the mind, its more remote cause usually is an inflammation in the membranes of the eye; and in this case its cure is to be accomplished by the removal of the inflammation: after which the eye

* See, on this subject, Zinn's *Descriptio Anatomica Oculi Humani*. Gottingæ, in 4to. ch. xiii. sect. 1; and Janin's *Memoires et Observations Anatomiques, Physiologiques, et Physiques, sur l'œil, et sur ses maladies*, à Lyon, en 8vo. p. 51.

is to be strengthened by mild astringent applications, such as cold water, either alone, or mixed with small proportions of white vitriol or verjuice.

But that species of the Epiphora which I now propose particularly to consider, is produced by an obstruction to the free passage of the tears from the eye into the nose. This obstruction may take place either in the ducts leading from the puncta lachrymalia into the lachrymal sac, or in the sac itself. When the ducts are obstructed, a case which rarely occurs, the tears fall over the cheek, and the sac is constantly empty. Pressure on the sac, therefore, can produce no regurgitation either of tears or mucus into the eye. The method of cure is here evident. A small probe of a suitable size must be introduced through the puncta of the obstructed ducts into the sac; and this operation must be daily repeated until the obstruction be removed. But the part in which the obstruction most commonly lies is in the sac itself; and in this case the tears, mixed sometimes with mucus, flow back

into the eye through the puncta, when pressure is made on the sac. Without adverting at present to the bony duct of the os unguis, (in which a part of the lachrymal sac is lodged,) a disease of which duct occasionally causes an Epiphora, and in general terminates in a fistula lachrymalis, an obstruction to the passage of the tears may be produced either by a thickening of the membrane which lines the sac; by the lodgement of inspissated mucus in the inferior portion of this cavity; or by a spasmodic action in that part which has been called by some a sphincter of the sac. These three causes of the obstruction not only take place separately, but sometimes exist together; and they mutually tend to increase each other.

It is well known that mucus is secreted by the membrane which lines the lachrymal sac, in like manner as it is secreted by the pituitary and other membranes. This mucus, when in its natural state, is perfectly limpid, and, mixing with the tears, passes with them into the nose; but when the membrane which lines the sac is diseased, it often
happens

happens that the mucus secreted by it is thickened; in consequence of which, it becomes incapable of passing through the sac, and the tears by its lodgement are prevented from pursuing their regular course; their descent being probably still further interrupted by a spasmodic action in the inferior part of the sac, which, as I have just observed, is by some supposed to form a sphincter sacculi.

This is the precise state of the disorder, the treatment of which I now propose to consider; and it is in this state of it that the means which will be recommended, appear most likely to prove successful.

Various are the remedies that have been proposed for the cure of the Epiphora by different surgeons. But it is needless to spend much time in enumerating them, since I know of none of approved efficacy, except the method first recommended by Monsieur Anel, in the year 1712, and that by Mr. Blizard, in the year 1780. It ought, however, to be mentioned that, in some few instances, stimulating

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applications, such as the unguentum citrinum of the Edinburgh dispensatory, and the * unguentum ad lippitudinem of St. Thomas's Hospital, when applied to the edges of the lids, and rubbed into the skin which covers the lachrymal sac, have been thought to afford relief. Stimulating remedies drawn up the nose in order to increase the secretion of the pituitary membrane, have also been supposed to possess some efficacy. But, notwithstanding the favourable effects which these remedies may occasionally have produced, practitioners well know that the assistance they are capable of affording is very uncertain; and, if thought adviseable, they may be adopted in perfect conformity

* The Unguentum ad Lippitudinem is directed to be made in the following manner :

R. Axungiae Viperinae curatae, drachmas tres
 Ceræ Albæ incisæ, drachmam unam
 Mercurii Corrosivi Rubri præparati, drachm. dimidiam
 Opii Colati, grana tria.

Liquefiat cera cum axungia in balneo arenæ, ac simul ac mistura lentescere incipit, admisce mercurium et opium, et bene move donec unguentum penitus refrixerit.

with

with the mode of cure I am about to recommend.

Monfieur Anel's method confifted in firft paffing a probe, and afterwards injecting a liquor, through the puncta lachrymalia, in order to clear away the matter which obftructed the lachrymal paffage. By thefe means he afferts that he performed many remarkable cures; and Heifter, in his General System of Surgery, confirms Anel's account; and adds, in his chapter on the *Fiftula Lachrymalis*, part ii. feft. 2. that by a fimilar practice he had, in many cafes, accomplifhed a cure, in fo fhort a fpace of time as three days. Strong, however, as this recommendation of Anel's mode of treatment, in cafes of the *Epiphora*, unqueftionably is, the practice of it has been rarely adopted in this country; and many of our moft celebrated authors, when writing on this diforder, have treated his propofition with marked indifference. Mr. Sharp, in his *Treatife on the Operations of Surgery*, page 176, declares himfelf "by no means inclined to think favourably of it." Mr. Warner, in his description of the human eye,

and its disorders, does not once mention it. And though Mr. Pott, in his *Observations on the Fistula Lachrymalis*, expresses himself more favourably of the use of Anel's syringe than Mr. Sharp did, yet after all, in page 40, he recommends the application of a vitriolic collyrium, and enlarges on the advantage of keeping the eye clean and cool, in such a manner as plainly to evince the indifferent opinion he entertained concerning it. Mr. Bell also, in the third volume of his *System of Surgery*, page 488, asserts in direct terms, that the puncta lachrymalia are so very small that no probe or syringe can be passed through them, of a size sufficiently large to remove an obstruction in the nasal canal.

In the year 1780, Mr. Blizard having turned his thoughts to the subject now under consideration, and recollecting that water injected through the punctum lachrymale not only had but little specific weight, but was urged through the lachrymal sac in an unfavourable direction, proposed, instead of water, to introduce quicksilver through a small pipe communicating with a long tube full of
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the same fluid. The specific gravity of the quicksilver, when the sac was distended with it, he believed, would have more power, than water propelled through a syringe, to remove the lachrymal obstruction. In a paper read before the fellows of the Royal Society, in the year above mentioned, Mr. Blizard informed them, that he had employed this method in a case which had continued seven months, and by means of it had accomplished a perfect cure of the disorder; the quicksilver, on the third and on the fourth time that the operation was repeated, passing freely through the duct into the nose. I have pursued Mr. Blizard's process several times, in cases which appeared to me to be similar to this above mentioned, and I have flattered myself, in one or two instances, that it was attended with good effects. But it is equally true, that in the greater number in which I used it the experiment failed. And it ought to be remembered, that in the case related by Mr. Blizard, as well as in those in which I used the quicksilver myself, the injection of water in Anel's method had not been tried.

tried. If therefore we admit its efficacy in the cases above mentioned, we are still, I think, unsupported in giving it a preference to Anel's method, since the latter, if tried, might very probably have been attended with equal success.

In a visit I made to Paris in the course of the last summer, I had an opportunity of conversing on the subject of lachrymal obstructions, as well as on many others which relate to disorders of the eye, with Messieurs Grandjean and Monsieur Arrachart, oculists of considerable celebrity in that city. By them I was informed that the practice of injecting water through the puncta lachrymalia, in incipient cases of the fistula lachrymalis, was by no means relinquished in France; but, on the contrary, that it was still adhered to, both by themselves, and by others, and that it often produced highly beneficial effects. I saw the operation performed by Messrs. Grandjean in several instances; in some of which, the liquor passed freely into the throat and nose; and the Epiphora, which I was informed had been long troublesome previous

to its use, appeared to be perfectly cured. In consequence of this recommendation, I determined, on my return to London, to give Anel's operation a fuller trial than I had hitherto done; and, as soon as I arrived here, I directed a small silver syringe, with pipes fitted to it of different sizes, to be made for me by Mr. Pepys, in the Poultry. When these were finished, I did not wait long for an opportunity of using them.

A lady in Great Russell Street came under my care, who for many months had been subject to an Epiphora of the left eye, which prevented her both from reading, and working with her needle, without undergoing great inconvenience. Whenever she employed herself in any way that required close attention, her eye became overspread with tears, and the sight was so much confused, that it obliged her to leave off almost as soon as she began. A great variety of remedies had been applied, under the direction of different medical men, but none of them produced any essential amendment. On examining the eye, I observed that the tunica conjunctiva, near the
inner

inner angle of the eyelids, was slightly inflamed; and on pressing the lachrymal sac with my finger, I perceived that a tear regurgitated through the lower punctum. This appearing to be a proper case for the use of the syringe, I immediately determined to employ it. But I found that though a tear came through the lower punctum on my pressing the sac, yet this punctum was so small that it would not admit the point of the smallest syringe I then had. I introduced into it, however, a small probe, and by means of this I so far dilated the orifice, that it admitted the point of the syringe, on the next day, without any difficulty. Upon my first using the injection, the water escaped through the upper punctum almost as fast as it was introduced through the lower; but, notwithstanding this, I persevered in urging the liquor on, until the whole contents of the syringe were exhausted. I repeated the injection three times the same day in immediate succession. The lady however was not sensible that any part of the water passed through the duct into
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the nose during either of these operations; and indeed it soon became evident that none had passed; for, having cleared her nose before I began, on her blowing it again immediately afterwards, she could produce no moisture on her handkerchief. I repeated the operation three times both on the second and on the third day; and each day, during the time that the water was passing, I not only endeavoured to prevent it from coming through the upper punctum, by covering it with the point of my finger, but I occasionally pressed the lachrymal sac in order to give the water an inclination downward. On the fourth day I very plainly perceived, on the patient's clearing her nose after the operation, that a part of the water had passed through the duct; and, the next morning, I had the satisfaction to hear, that the eye, on the preceding day, had watered much less frequently than it had done for a considerable time previous to it. I repeated the process above-mentioned about ten times in as many days, and I observed that the quantity of water which passed through the duct was augmented

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ed every time I used it. The tears, after this, resuming their natural course, the lady recovered the power to read and work without any inconvenience.

Since the cure above mentioned, I have made use of the syringe in a considerable number of cases, which appeared to be similar to this I have now described; and in several of these it was attended with very manifest advantage. I shall take the liberty to relate the three following, which appear to deserve notice.

A lieutenant in his majesty's navy caught a violent cold, about six weeks before I saw him, in consequence of his being exposed for several nights and days together in an open boat at sea. The cold was accompanied with a watering of the left eye, which soon became excessively troublesome. It continued a fortnight, and then suddenly went off without the use of any remedy, except the occasional application of cold water to the eye. At the end of a week, however, the disorder returned with increased violence, and the young gentleman was obliged almost continually to
wipe

wipe off the tears which ran over his cheek. With the tears a thick mucus was frequently mixed, particularly in the morning; and the eyelids, when he awoke, were always gummed together, the eye itself being often inflamed. The disorder had been suffered to continue a month after the relapse above-mentioned, without any advice from the faculty, a hope being entertained that it would again go off, as it had before done, without medical assistance. Disappointed, however, in this expectation, he at length consulted me. On examining the eye, I found that the tunica conjunctiva, on the side next the inner angle of the eyelids, was considerably inflamed; the caruncula lachrymalis was enlarged; and some tears mixed with mucus were retained in the lachrymal sac, which regurgitated through the lower punctum on my pressing the sac with my finger. I immediately endeavoured to inject some water through the sac into the nose; but the passage was so much obstructed that no part of the liquor went through. I repeated the operation the following day, but again without success.

success. After the process I each day touched the edges of the eyelids with the unguentum citrinum, and applied a drop of the thebaic tincture to the eye. I also gave him a box of the unguentum ad lippitudinem to apply to the lids when he awoke in the morning, in order to remove the gum that collected on their edges; and in the course of the day I desired him to wash his eyes frequently with a weak solution of corrosive sublimate. On the two former days, as the weather was warm, the water which I had attempted to inject through the punctum was cold. In the third experiment, this day, the water was warmed, and I added a pipe to the syringe, the point of which was much larger than that of the pipe I before used. I now had the satisfaction to find that a small quantity of the liquor passed into the nose. On the fourth day I was informed, that since the last operation the watering of the eye had been much less troublesome; and on repeating it, some of the water was evidently swallowed. On the fifth day the whole of the liquor injected through the punctum

punctum passed through the duct; part of it being swallowed, and the remainder running out of the nose. After this time I had occasion to repeat the operation only twice, before the Epiphora entirely ceased, and the eye became perfectly well *.

A third case, in which the operation succeeded, was that of a clergyman from Bristol, whose right eye had watered almost continually for seven months. He had no other apparent disorder in the eye, and the inferior punctum was sufficiently open to admit the end of a pipe much larger than I usually employ on such occasions. The liquor passed freely through the sac the first time I attempted to inject it. I had occasion to repeat the operation only once more, and this after an interval of three days. The liquor again passed freely into the nose; after which the Epiphora entirely ceased, and the sight became as clear and perfect as that of the other eye.

* The preceding case has been inserted since this paper was read before the Medical Society, in place of one which is here omitted.

The last case I shall mention, in which I used the syringe with success, was that of a young woman in Basinghall Street, whose right eye had watered almost continually for two years, and who had, in a great measure, been disqualified by it from attending to her business, which was that of a lady's woman. On examining the eye, I perceived that both the upper and lower puncta lachrymalia were exceedingly contracted, and I found it very difficult to introduce a small probe into either of them. As there did not appear to be any retention of tears in the lachrymal sac, I had a hope that a dilatation of the puncta would have produced a cure. In this, however, I was disappointed, since on the following day I was informed, that the watering of the eye had been quite as troublesome as before the introduction of the probe. I now found some tears retained in the sac, and on my pressing it with my finger, they freely regurgitated through the puncta. It is probable, therefore, that on the preceding day the sac had been pressed by the patient, in order to make the eye appear clean before I examined

amined it. I proceeded immediately to make use of the syringe, but at first could introduce only a very small pipe into the punctum. The patient received no relief from the operation till after it had been repeated several times. On the sixth day, however, the liquor passed freely through the duct into the nose. After this, the eye became a little inflamed, and I was under the necessity of desisting from the use of the syringe for nearly a week. I afterwards had occasion to repeat the operation only twice before the Epiphora entirely ceased, and the patient pursued her business with ease.

Before I conclude my paper, it may be of use to remark, that the only liquor which I have hitherto injected through the puncta lachrymalia has been common water; sometimes cold, but oftener warmed. Warm water, I think, in general, is to be preferred, on account of its relaxing power; by means of which, in addition to the mechanical influence which is communicated to it by the syringe, it also contributes to take off any spasmodic action that may have been excited

in the inferior part of the lachrymal sac. Hereafter it may be found, that medicines may be injected through the puncta with advantage; but in making experiments care should be taken that the medicines be of such a kind as will neither clog nor corrode the pipe through which they are injected.

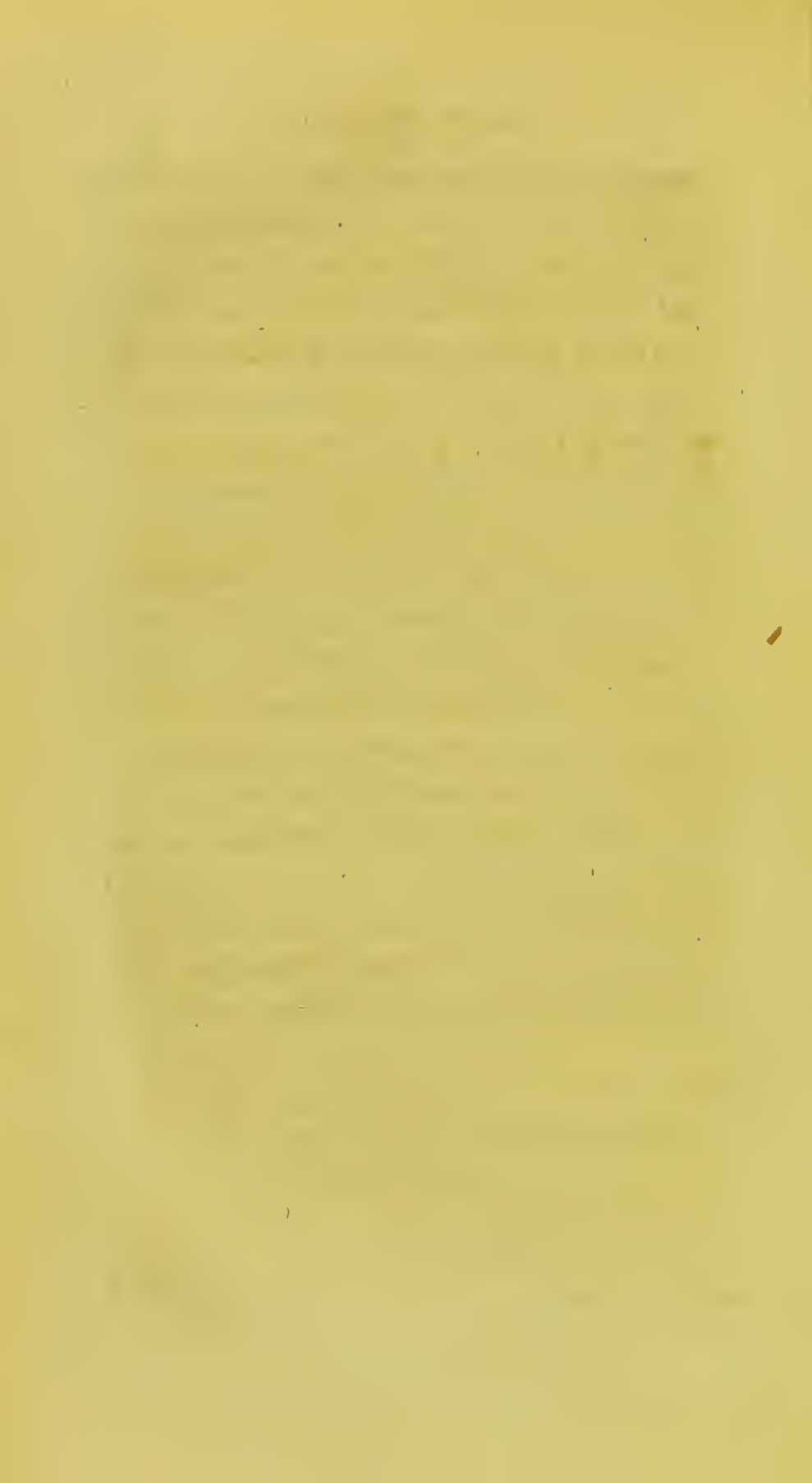
It is also proper to add, that the pipes I use are much shorter than that which is represented by Mr. Bell, in his System of Surgery*; and they are a little arched toward their point. With this alteration they appear to me to be much more convenient for the purpose of being introduced into the punctum lachrymale, than if they were long and straight. It is adviseable to have several pipes always ready. These should be of different sizes, and the largest that can be introduced, without giving pain, should always be used.

As an attention to minute circumstances is often of great consequence in performing operations, I take the liberty to add, that

* Vol. iii. Plate 37.

when

when I use the syringe, I find it convenient to stand either behind the patient, or on the side opposite to that of the diseased eye; and always high enough to give me a full command of the patient's head. The syringe being held in the right hand, the eyelid should be drawn downward, and a little outward, with the forefinger of the left hand. This will bring the inferior punctum fully within sight of the operator, and will place it in a position, very convenient for the purpose of admitting the point of the pipe. When the pipe is introduced, the finger should be removed from the lower lid, and be applied as accurately as possible over the superior punctum, to prevent the liquor from escaping through it; and with this finger the lachrymal sac should occasionally be compressed, in order to assist the determination of the liquor downward into the nose.



UPON THE
 SUPERIOR EFFICACY OF THE
 CORROSIVE SUBLIMATE
 TO THE
 PERUVIAN BARK,
 IN CASES OF THE
 INTERMITTENT OPHTHALMY.

TO WHICH ARE PREFIXED,

A few short Remarks on the Use of the BARK, when the OPHTHALMY is connected with a Scrophulous Constitution, and accompanied with much general Debility.

Read before the Medical Society, October 10th 1790.

IT has been remarked by authors on Pathology, that when a disorder assumes a regular intermission in its symptoms, though it be perfectly distinct from an intermittent fever, the Peruvian bark is a remedy highly proper to be administered. Accordingly, when there have been such intermissions, instances are not wanting, in which large doses of the bark have been given, and in disorders ex-

tremely different one from the other, with very manifest advantage. In regard to medicine, however, as well as to other branches of science, it may be observed, that no general rule can be established, which does not admit of exceptions. And it is the principal object of this paper to point out a species of the Ophthalmia, in which an intermission of the symptoms takes place with great regularity, and yet the bark is found to be totally inadequate to the purpose of affording relief. But before I proceed further on this subject, I beg leave to observe that the Peruvian bark is administered, at different times, with two different intentions. In some instances, as in those of the intermittent fever above mentioned, the bark is given in large doses, and is supposed to exert a specific power on the constitution. In others, where there is only a general debility, it is given in doses much smaller, and less active, than in the former instances, and is intended merely to strengthen the system. With the latter of these views, Dr. John Fordyce and Dr. Fothergill strongly recommended

mended the bark in scrophulous disorders; and cases have been adduced by both these gentlemen, in the first volume of the London Medical Observations, in which it proved very efficacious. Among a variety of appearances which the scrophula occasionally assumes, the bark is said to have been found remarkably useful in the Ophthalmia arising from this cause. Dr. Fothergill, however, particularly mentions, that he gave it, in these cases, in the form of a decoction. Dr. Fordyce, who relates only one case of the Ophthalmia, has not specified the form in which it was administered by him. The experience I have had in similar cases of the Ophthalmia, accompanied, as it often is, with a feeble and debilitated constitution, enables me to concur with these gentlemen, in thinking the bark, and especially in the form of decoction, a highly valuable medicine. I have usually administered an ounce and a half, or two ounces, of the decoction, two or three times in the course of the day, and have often found its efficacy much increased, by uniting with each dose twenty or thirty grains

grains of the sal polychrestum of the Edinburgh dispensatory. In this state of combination, the bark is less apt to induce heat in the system than when it is given alone ; and in costive habits it will often be found, without any other assistance, to procure one or two easy stools in the course of the day.

It has not appeared to me adviseable, however, to confine my attention, in cases of this description, solely to the use of internal remedies, as was done by the gentlemen above quoted ; but being of opinion, that in the scrophulous Ophthalmia the eye is locally irritated, I would recommend, that the use of remedies internally should always be accompanied with external applications ; and I have found that one drop of the thebaic tincture, dropped into the eye once or twice in the course of the day, contributes greatly both to abate the irritability, and to increase the strength of the relaxed vessels. I have observed, that the effects of this application are more remarkably beneficial after the use of evacuants, and of those other remedies which tend to diminish the general strength,
than

than at any other time ; and, indeed, when the inflammation has arisen to any considerable height, the use of evacuants is often indispensably necessary, previous to the application of the tincture. But in cases where there is reason to suspect, from the excoriation of the lids, and their occasional adhesion to each other, that the sebaceous glands, situated near their edges, secrete an acrimonious fluid, (which circumstance is not uncommon, even when the quantity of gum lodged on the lids is so small as scarcely to be perceived) it will be found useful to apply to the edges of the lids, once in the day, by means of the finger, or of a camel's hair pencil, a little of the unguentum citrinum of the Edinburgh dispensatory *, melted before a fire or candle.

Again, cases are not uncommon, especially in children, in which there are no marks whatever of humour on the edges of the eyelids, and very little appearance of inflammation in the membranes of the eye ; but,

* This ointment is called, in the new London Pharmacopœia, Unguentum Hydrargyri Nitrati.

notwithstanding

notwithstanding this, the lids are so much relaxed, and the eyes, at the same time, are so extremely irritable, that for many days together the children cannot be prevailed on to open their eyes, even in the darkest rooms; and, if permitted, they will almost constantly lie on their faces; which posture is extremely injurious, and ought always, as much as possible, to be prevented. In some such relaxed cases, very beneficial effects have been produced by administering internally small doses of opium, night and morning, to abate the irritability. I have also found it useful to wash the eyes and eyelids three or four times in the course of the day, and ten minutes or a quarter of an hour at a time, with cold spring water, fresh drawn from the well. With the water I have occasionally mixed old verjuice, adding, at first, one part of the latter to six of the former, and increasing the quantity of verjuice, until, sometimes, there has been an equal proportion of verjuice and water.

But I will not enlarge further on the general treatment of the Ophthalmy. In this
first

first part of my paper, it is my principal intention to consider the propriety or impropriety of administering, in such cases, the Peruvian bark internally. And from the authorities I have adduced, as well as from the experience I have had on this subject, it appears to me fully evident, that the decoction of the bark, mixed with more or less of the sal polychrestum, according to the state of the stomach and bowels, and assisted by the applications above recommended, has often proved highly beneficial in those cases of scrophulous Ophthalmia that have been accompanied with much general debility.

There is, however, another species of the Ophthalmia, besides the scrophulous, for the cure of which the Peruvian bark has not unfrequently been recommended, and sometimes in very large doses; I mean the Ophthalmia, whose symptoms intermit, or at least remit, at stated periods. From the experience I have had in cases of this description, I am not able to speak so favourably of its use as in the scrophulous Ophthalmia.

But

But it should be remembered, that the bark, administered to check the progress of an intermittent fever, is given in different doses, and, in consequence of this, acts, as many think, differently on the system, from the same bark prescribed solely for the purpose of strengthening a debilitated constitution. In the latter case, the decoction, administered two or three times in the course of the day, is, for the most part, fully sufficient to restore the strength. In the former, in order to prove effectual, it requires to be administered in substance, and, generally, in large doses, frequently repeated: and when the Bark is thus given, I am inclined to believe it will rarely fail to increase a local inflammation, in whatever part of the body this inflammation may happen to be situated. I am supported in this opinion by very respectable authorities. Sydenham, in his Epistle to Dr. Brady, on Epidemic Disorders, objects to the use of the bark in all inflammatory complaints. Boerhaave, in his Aphorisms on Intermittent Fevers, recommends the bark with this express caution, “ that there be no sign of inflam-
“ nation

“ mation internally.” And Van Swieten, in his comment on these Aphorisms, not only repeats the same caution, but particularly specifies “ a slight inflammation of the liver, in which the use of the bark has always been found to produce the worst consequences.” Dr. Cullen, in his Lectures on the Materia Medica, observes, “ that the bark aggravates an inflammatory state of the system, and determines to local and fatal inflammations of the brain and lungs.” And Dr. Saunders, in his Observations on the Red Peruvian Bark, remarks, “ that it increases the animal heat, and aggravates every symptom in those fevers that are accompanied either with much local inflammation, or with a general inflammatory diathesis.”

After such powerful objections to the use of the bark, in cases of local inflammation, by authors of such established reputation as those I have here quoted, and corroborated, as they are, by the experience which many of my friends as well as myself have had, in cases of this description, I beg leave to caution
practitioners

practitioners against hastily adopting the use of a remedy, which, in many instances, has been observed not merely to be ineffectual, but sometimes evidently injurious. And I think it particularly necessary to guard against administering it with freedom in the intermittent Ophthalmy, because, though this disorder, on account of its intermissions, may be supposed more evidently to call for its use than most others, yet it has here been found to be quite as ineffectual as in any other inflammatory complaint to which our constitutions are liable. This opinion of the insufficiency of the bark, in the instances to which I here allude, is by no means invalidated by the success which attended its use in the cases of scrophulous Ophthalmy related by Dr. Fordyce and Dr. Fothergill; since in these instances it was given solely with a view to strengthen the constitution, and was not intended to produce that specific effect by which it cures intermittent fevers, and which it rarely accomplishes, unless administered in large doses, and unless these doses be frequently repeated.

But

But having objected to the use of the bark in the treatment of a species of the Ophthalmia, which too often occurs, and which has been found to resist the most approved external remedies, unaided by those that are internal, I am happy in having it in my power to recommend a medicine, which, in several such cases, has been observed to produce the most beneficial effects. The medicine I mean is the Hydrargyrus Muriatus, more commonly known by the name of Corrosive Sublimate. In the second edition of the Remarks which I published on the Ophthalmia, I related a case of this kind, the symptoms of which, though always severe, were considerably aggravated every evening. In the beginning of this case, evacuating remedies were freely used, and with them was joined the use of opiates, both internally and externally; but these were insufficient to produce the smallest amendment. I afterwards directed a quarter of a grain of sublimate to be given every night at bed-time, and a drachm of red bark three times in the course of the day. These

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remedies

remedies had been administered only three days, before the pain in the head, which, for a long time, had been dreadfully severe, entirely left the patient ; and in the space of a week, the Ophthalmy also was considerably abated. After this, the sublimate was omitted for one night only, the bark being still continued: but, in that short space of time, the pain in the head returned with violence. The use of the sublimate was therefore resumed, and the bark was now omitted. The pain again went off almost immediately. It returned no more afterwards ; and in a short time, the patient recovered as perfect a sight with the eye which had been inflamed, as with the other, which throughout the whole illness had not been at all affected.

Now, in the instance here alluded to, notwithstanding the pain both in the head and eye was much increased on the approach of evening, and the use of the sublimate afforded the most remarkable relief, there was not the smallest reason to suspect a venereal infection in the habit. Since my attendance upon this case, I have had occasion to ad-

minister the same remedy in a considerable number of others similar to it; and I have the pleasure to assure the society, that, almost constantly, it has produced the same beneficial effects. I lately attended a case of this kind with a very respectable apothecary, a fellow of this society, in which the intermissions were so compleat, and the returns of pain so regular, that though we persisted in administering the sublimate, and in the end accomplished a cure by its means, I could not avoid entertaining, at first, many doubts as to the sufficiency of the remedy. The case appearing to me remarkable, I beg leave to relate, with some minuteness, the circumstances that attended its progress.

Mrs. —, about forty-five years of age, whose menses for many months had been very irregular, was attacked, in June last, with a violent inflammation in both her eyes. This appeared to be the consequence of a cold, which she caught during the continuance of a rash on her skin. The gentleman who first attended her applied five leeches to her temples, and a large blister on

her back. He also directed one drop of the thebaic tincture to be dropped into her eyes once or twice in the course of the day, and prescribed, in succession, a great variety of eye-waters. These, with many internal remedies, were employed with great perseverance, for a considerable time, without producing any lasting amendment. After the disorder had continued six weeks, it began to intermit; and both the inflammation and pain (which last not only affected her eyes but her whole head) became every other day much more violent than on the intervening day. The fit usually began about one o'clock in the morning, and continued till eleven or twelve at noon. In consequence of this change in the state of the disorder, the patient's apothecary now administered the Peruvian bark; which medicine he at first gave in a decoction, but afterwards in powder, and in the dose of a drachm, repeated every second hour. The use of the bark was continued only a few days, before the Ophthalmia became more violent, and the pain, almost at all times, was equally severe.

severe. Her pulse being both quick and strong, and the fever constantly very considerable, it was now thought indispensably necessary to omit the bark, and to take ten ounces of blood from her arm. The next day, when I saw her for the first time, her pulse, notwithstanding this loss of blood, continued still so full, and the inflammation in her eyes was still so considerable, that I thought it further necessary to propose the application of three leeches to each temple, and afterwards of blisters, the size of half a crown, over the same parts. I also recommended a saline draught to be administered every eight hours; and, once in the day, previous to the application of the thebaic tincture to the eyes, which was still continued, I anointed the edges of the lids, by means of a camel's-hair pencil, with the unguentum citrinum of the Edinburgh dispensatory, warmed before a candle. I was led to the use of the citrine ointment by the appearance of the lids, the edges of which were red and sore; and this circumstance inclined me to suspect that the ciliary glands secreted

an acrimonious fluid, which contributed to keep up the irritation of the eyes. In a few days, in consequence of pursuing this plan, both the fever and the inflammation were much abated. But the disorder now began again to assume an intermittent type. The decoctum corticis Peruviani was therefore directed to be given instead of the saline draughts, and to each dose a scruple of the sal polychrestum was added. Together with these, a large blister was ordered to be applied over the whole crown of the head. The blister produced a considerable discharge, which seemed greatly to relieve both the head and eyes. But, notwithstanding the temporary benefit thus produced, the pain and inflammation returned about twelve o'clock the following night with great severity, and continued, without any abatement, between six and seven hours; after which, they again went off, and left the patient tolerably easy. From this time she continued in a state of apparent amendment, during the whole both of that day, and of the next, and till six o'clock on the third morning, when both
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the pain and inflammation returned with their usual violence, and continued, without any alleviation, till between one and two in the afternoon, at which time they again abated as before. The intermission of the symptoms being now established in the completest manner, and the power of the bark having been formerly tried without producing any amendment, I proposed, on the seventh of July, to administer the Corrosive Sublimate in the dose of a quarter of a grain every night. This being approved, it was dissolved in half an ounce of spirit of cinnamon, and, being mixed with a draught of the decoctum corticis above mentioned, was given to the patient at bed-time. The paroxysm of pain returned with its usual violence on the ninth and eleventh instant; on each of which days the fit began six hours later than on the day of the preceding fit. I now desired that the bark draughts, of which she took two in the course of the day, might be given alone, and that the solution of the sublimate, which had before been taken in one of these draughts, might be increased to half

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a grain,

a grain, and administered after she was in bed, in a basin of warm gruel. July the thirteenth, the fit was considerably less severe, and continued a much shorter time. On the fifteenth it was so slight as scarcely to be perceived. After this time, her amendment advanced with great rapidity; and in the course of a few days, the Ophthalmia was totally subdued, the sight restored, and the pain entirely removed both from the head and eyes. In the course of the cure, the thebaic tincture and citrine ointment were regularly applied every day in the manner above mentioned; cloths wet with the thebaic tincture were frequently laid over the eyes; and occasionally the whole head was fomented with a strong decoction of poppy heads *.

I presume it will not be doubted, that the administration of the sublimate, in the preceding

* After the cure above related, the eyes of the patient continued well until the end of September following. About this time, some new symptoms appeared, which caused a suspicion that a venereal poison lurked in her constitution. The symptoms, however, by no means afforded a proof of the existence of this as their cause; and it is probable that it would not have been suspected, if
some

ceding case, produced the most beneficial effects. Were it necessary, I could adduce many other instances in proof of its efficacy. I have further to observe, that the intermittent Ophthalmia is not the only inflammatory complaint in which the solution of the sublimite may be administered with advantage; and, extraordinary as it may appear, I have remarked it to be singularly useful in several inflammations of the eye, which have followed putrid and nervous fevers. In cases of this latter description, the inflammation, though small in appearance, is generally attended with a deep-seated pain in the orbit, and a peculiar dulness in the transparent parts of the eye. It is usually accompanied also with great general debility. But although, on this latter account, those medicines are highly pro-

some similar symptoms had not shewn themselves in the husband at the same time. In order to remove these, the patient was put under a course of mercurial alterative medicines. The particulars of this course it is not necessary for me to specify. It is sufficient to say, that during the use of these medicines she had no return of the inflammation in her eye, and in the end obtained a perfect cure,

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per which tend to recruit and invigorate the constitution, yet I have rarely observed that these, unaided by other means, were able to remove the disorder in the eye. For this latter purpose, I know no remedy that has afforded such essential assistance as the solution of Corrosive Sublimate, which I have usually administered at bed-time, and in doses similar to those that are above recommended, for the cure of the intermittent Ophthalmia.

A SUPPLEMENT

To the preceding P A P E R;

In which is related a Case of O P H T H A L M Y,
wherein the Administration of C O R R O S I V E
S U B L I M A T E was found remarkably useful:

TOGETHER WITH

An Account of some peculiar Appearances, discovered on the Dissection of two diseased Eyes.

Read before the Medical Society, October 31st 1791.

SINCE the preceding paper was read before the society, I have attended many cases which still further confirm me in the opinion I have advanced, with respect to the efficacy of the Corrosive Sublimate, in the intermittent and remittent Ophthalmy. And although the following case may not be considered, in strict propriety, as coming under this denomination, I shall take the liberty briefly to describe it, on account of the particular circumstances by which it was followed.

Mr.

Mr. —, a lusty man, about fifty years of age, was attacked with an inflammation in the right eye, which was soon followed by a violent pain over the whole head, as well as in the part which was first affected. The pain was not equally great at all times. It returned at uncertain periods, but chiefly in the night; and for several days before I saw him, the eye had been totally deprived of sight. In this case, after the free use of evacuating remedies, which did not afford the assistance expected from them, very striking relief was obtained by administering the sublimate in the manner recommended in the preceding pages. After the patient had taken a few doses of it, the pain abated, and in a short time the inflammation subsided, and the sight of the eye was completely restored.

It deserves notice, that the patient had been deprived of the sight of the left eye eight years before he was attacked with the inflammation above described in the right eye. The sight of this eye was lost gradually; the blindness being neither preceded by,

by, nor accompanied with, either pain or inflammation; and the progress of the disorder was so slow that two years elapsed before the eye was totally dark. The sight first became dim during the time that the patient had an intermittent fever; which fever continued a considerable time, notwithstanding large quantities both of the Peruvian bark, and of many other medicines had been administered. And when at length the sense of vision, after many fruitless attempts to preserve it, was wholly lost, the blindness was attributed to an insensibility of the retina, and all hopes of recovering it were relinquished, both by the patient and by his friends, many years before the inflammation took place in the other eye. At the commencement of this inflammation, which was the first time of my being consulted, I could not perceive that the pupil of the left eye, which eye had been blind eight years, was more dilated than the pupil of the right eye; but it had lost its power to dilate and contract in different degrees of light, and had a peculiar dull look, very different from
that

that of an opaque crystalline, either in an incipient or confirmed state, and of that kind which I have not unfrequently observed in other cases, where the sight was wholly lost. The left eye continued perfectly free both from pain and inflammation, during the whole time that these were most violent in the opposite eye. But within a week after they were removed from the right eye, the patient was detained above an hour, in a cold windy evening, in an open church-yard; and, in consequence of this, the very next day an inflammation took place in the left eye, which, as I have just observed, though blind, had never before suffered from this cause. The pain in the head again returned, and was particularly severe over the left orbit; from whence it seemed to shoot through the eye into the cheek on that side. Its violence, exactly in the same manner as happened when the right eye was inflamed, was greatly increased on the approach of evening; and for many successive nights the patient was unable to procure either sleep or ease. In consequence of this, during the day he was remarkably

ably drowsy. Evacuating remedies were again employed, the sublimated was again administered, and the power of opium, and of various other remedies, was again tried with a view to relieve the pain; but all without success. The external inflammation was sometimes a little abated, but the pain continued; and at the end of about three weeks from the last attack, shortly after the patient had eat a light supper, he suddenly lost the use of the left side. In three days after this, his speech failed, and his other side became useless. Convulsions soon followed; and in four days more he died.

On opening the head, which was performed in presence of Mr. Hunter and Mr. Home, we found that the ventricles of the brain were distended by a considerable quantity of clear pellucid water. The optic nerves, and all the other parts within the cranium, appeared free from disease. The different coats and humours of the right eye were perfect. On cutting through the sclerotica of the left eye, the choroides was found to lie close to this coat, and appeared

to be distended in the usual way by the retina, and the humours that are placed within it. But on making a puncture through the choroides, about the middle of the space between the rim of the cornea and the entrance of the optic nerve, a yellow-coloured fluid, as thin as water, immediately escaped through the wound; and on enlarging the incision, the retina was found to be collapsed, and to resemble a cone of a white colour, the apex of which was at the entrance of the optic nerve, and its basis round the circumference of the crystalline humour. This humour, which could not now be accurately distinguished from the parts contiguous to it, seemed to adhere to its capsule, and the capsule to the posterior surface of the iris; and there did not appear to remain the smallest vestige of the vitreous humour.

I do not remember, in any author, to have met with the description of a case in which the immediate cause of blindness was similar to that which has just been related; and I recollect only one instance, in which the appearance on dissection

tion bore a resemblance to it. This was in the case of a young lady about six years old, who gradually lost the sight of the left eye, in consequence of the formation of a white substance in the posterior part of the vitreous humour. The whiteness was perceptible through the pupil, in some particular positions of the head, but not in all. It continued without producing any other change in the appearance of the eye for many months. At length the eye began to enlarge; soon after which its natural shape was destroyed, and the tumor assumed a carcinomatous appearance. When the tumor had advanced thus far; it was thought advisable, in consultation with several gentlemen of the profession, to extirpate it entirely; and the operation was performed with great accuracy and care; but notwithstanding this, in the course of a few weeks, the tumor discovered a tendency to regenerate; and in a short time it grew again to its former size, being now accompanied with an enlargement of the left parotid, and of many other glands on that side of the face and neck. An appearance was now

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also discovered in the pupil of the right eye, similar to that which had been perceived, at the beginning of the disorder, in the pupil of the left eye. But here it advanced no further than to be perceptible as a white substance in the posterior part of the vitreous humour, and this only in particular positions of the head, when the young lady died; having previously suffered most violent pain in the whole head, and particularly on its left side. On opening the head, a thick sanious fluid was found collected between the cranium and dura mater, not only on the inside of the left orbital process of the os frontis (which process was carious, and its surface much jagged), but also on the inside of the os occipitis, a little inclined to the right side, where it occupied a space nearly as large as a crown piece. The bone here also was discovered to be very rough and jagged, and it appeared to be indented by the pressure of the confined matter. The quantity of water collected in the ventricles of the brain, was considerably greater than is usually here found; and several small hydatids were observed on the plexus choroides. The cavity of the left orbit

orbit was filled with the excrescence above described. The right eye did not appear to be enlarged; but on cutting through its tunics, almost the whole space, usually occupied by the vitreous humour, was found to be filled by a steatomatous substance which, in general, was of a white colour, but in some few places was red and bloody: When this substance was removed, a white smooth tumor was discovered behind it, perfectly distinct from the steatomatous substance above mentioned, and appearing to be a morbid alteration in the state of the tunica retina itself. The tunica choroides had very little of the nigrum pigmentum spread over its surface: The crystalline humour, as well as its capsule, was perfectly transparent; and the optic nerve, and every other part connected with the eye, appeared to be in an healthful state.

In this case, notwithstanding the morbid change above described in the tunica retina, and in the vitreous humour, it is remarkable, that the eye preserved a considerable degree of sight even till the time of the young lady's death,

ON THE
DEGREE OF PRESSURE
NECESSARY TO BE APPLIED TO THE EYE,
IN THE
EXTRACTION OF THE CATARACT:

AND ON

The Inutility of Skill in an Assistant, in the
Performance of this Operation.

Read before the Medical Society of London,
Nov. 7th 1791.

THE success of chirurgical operations depends so much upon the simplicity of the mode in which they are performed, that every attempt to make improvements in this respect is entitled to some degree of indulgence. Simplicity ought to be more especially regarded in an operation of so much consequence as that of extracting the cataract; which involves in it the restoration of sight, or a state of perpetual blindness. The attention of many eminent

surgeons has been directed to this important object ever since the time of Daviel, who, though he was not the first that performed this operation, was, however, the first who brought it into any considerable degree of repute. After him, Mons. Garangeot, Mons. Poyet, and Mons. De la Faye, in France, Mr. Sharp and Mr. Warner, in this country, together with many others in various parts of the world, employed themselves, and with no inconsiderable success, in endeavouring, by means of a few instruments, to obtain the end, for which purpose Daviel employed a considerable number. But it must still be acknowledged that the efforts of these gentlemen were very far from advancing the operation to that state of perfection, which was necessary to render it generally, or indeed frequently successful. Their failure appears to have been owing, in a considerable degree, to their not distinguishing those parts of the operation in which pressure might be applied to the eye with advantage, from those in which this pressure would prove injurious. Some operators objected to every species of
pressure,

pressure, and trusted solely to the steadiness of the patient's eye, whilst they carried the knife through the cornea. The eye, however, being unsupported, most commonly moved, as soon as the instrument pierced the outer side of this tunic, into the inner angle of the eyelids, where it was hid from the inspection of the operator; and in consequence of this, the incision of the cornea being finished in the dark, it was made incorrectly, and in general proved much too small. The unavoidable effect of this accident was, that it afterwards required considerable force to bring the cataract through the incision of the cornea; and in doing this, sometimes a part of the vitreous humour escaped with the cataract, and at other times a portion only of the opaque lens was extracted, the remainder of it continuing in the eye, and still intercepting the rays of light*.

The failures, that were occasioned by this

* Although opaque portions of the crystalline humour, that have been left in the eye after the operation, have sometimes been dissipated, yet it is equally true, that at other times they have continued in their opaque state.

last circumstance, led many gentlemen to the use of instruments invented with a view to fix the eye during this part of the operation; and specula of various forms have accordingly been constructed for this purpose. The late Mr. Elſe, and Mr. Wathen, among others, were assiduous in their endeavours to render specula useful; but, after repeated trials, both these gentlemen were fully convinced that the eye could not be fixed by them without considerable danger. The effect which almost constantly took place in the use of them was, that, as soon as the incision through the cornea was compleated, if this incision was equal in dimensions to half the diameter of the cornea, which it certainly ought to be in every case, the cataract suddenly rushed through the wound, and most commonly a considerable portion of the vitreous humour also escaped with it.

The present Baron de Wenzel, in his ingenious and candid treatise on the operation of extracting the cataract, aware of the injurious effects to be apprehended from this cause,

cause, expresses his entire disapprobation of the use of specula of all sorts, as applied for the purpose of fixing the eye. But, notwithstanding his objections to these instruments, which entirely coincide with my own ideas on this subject, I cannot refrain from expressing surprise that he should adopt, without limitation, a direct contrary practice, and should recommend that the eye be left perfectly free whilst the knife is carried through the cornea. The experience I have had in extracting the cataract, affords me very strong reasons to believe, that, unless the motion of the eye be checked by some kind of pressure, when the knife first pierces the cornea, it can rarely be prevented, with all the firmness and self-possession, which a patient thus circumstanced may be able to command, from moving into the inner angle of the eyelids, and thus lying concealed from the view of the operator. The Baron's direction to leave the eye perfectly free during this part of the operation, appears to me still more extraordinary, when I recollect that I am indebted to his father's practice for the first hint I received

received of the manner in which this pressure may be applied, so as to answer the intended purpose, and in which it may at the same time be so adjusted as to prevent it from becoming injurious. In an operation which I saw performed by him in the year 1779, I remarked, that before he began to divide the cornea, he placed the fore-finger of his assistant, a young lady, who I understood to be his daughter, upon the globe of the eye, a little above the cornea, and rather more inclined to the nose than to the temple. His own fingers the Baron placed below the cornea, and one of them was opposed precisely to that of his assistant. In making this pressure, it was evidently his design to fix the eye. But almost as soon as the cornea knife had pierced through the inner side of this tunic, and long before the Baron had completed its section downward, he directed his assistant to relinquish the eye. Upon this she instantly removed her finger from the upper part of the eye, and supported the lid by gently pressing it against the edge of the orbit. The Baron himself at the same time

time quitted the lower part of the eye, and afterwards kept it steady solely by the management of the knife, which was employed in making the section of the cornea, and which he had now passed through both sides of this tunic. From the late Baron de Wenzel, therefore, it must be acknowledged, that I derived the idea of dividing the incision of the cornea into two parts; the first of which may be called the punctuation of this tunic; and the second, its section. And on this account it appears to me the more remarkable, that the present Baron, in a professed treatise on the operation of extracting the cataract, should omit even to mention so essential a part of the process; a regard to which has contributed in no small degree to the success which has attended my practice in cases of this description.

But it is not my intention in this paper to enter into a description of the various parts of the operation. The only object I have further in view, is to consider the danger which must necessarily arise from the want of a perfect understanding, whenever this unfortunately occurs, between the operator
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and his assistant; and to offer a hint, by an attention to which, it should seem that this danger may be wholly avoided.

The late Baron de Wenzel was so thoroughly apprised of the necessity of having a person to assist him, who should have a perfect conception of his wishes, and should be able instantly to co-operate with him in the various parts of the operation, that he regularly brought with him, in his annual visit to this country, the young lady above mentioned, to whom he always intrusted the care of the upper eyelid. His son, in his treatise on the cataract, speaking of the importance of having an assistant who is well acquainted with the operation, and even in the habit of performing it, observes, “ that such
 “ a person is alone competent to follow the
 “ motions, and to accommodate himself to
 “ the wishes of the operator, by widening
 “ or closing the lids as circumstances may
 “ require; and, by executing the different
 “ movements which tend to aid and facilitate
 “ the progress of the operation.”

From hence, I think, it appears, that no inconsiderable part of the success which attended

tended the operations performed by the Baron, and by his son, were by themselves attributed to the skill and dexterity of the assistant they employed. When, therefore, I presume to advance an opinion different from that which was entertained by these gentlemen, it becomes me to do it with caution and diffidence. Being, at first, under the necessity of calling in the assistance of a person, of whose chirurgical skill I had previously no knowledge, I began to consider whether there was any real occasion for such skill: and, in the course of the last six months, having, in the presence of many gentlemen of the profession, operated with perfect success in nine cases, in which I was assisted by four different persons, and four times by my own footman, I trust I am justified in asserting that dexterity in an assistant is by no means necessary, and that a person who never heard of the operation may, in a few minutes, be taught what is required from him, and prove as useful to an operator, as the most dexterous and experienced surgeon in the kingdom.

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The only help which an operator really needs from an assistant, is to support the upper eyelid, and, in a few peculiar instances, to keep the eye more steadily fixed than he is able to do with his own fingers, whilst he conducts the cornea knife through the cornea, and carries it sufficiently low to be certain that the iris is out of danger of being wounded by it. When this is accomplished, the necessity for an assistant ceases; and the operator should not only remove his own fingers from pressing on the eye, and use them solely to keep the lower lid out of the way of the instrument, but he should at the same time direct the assistant to take his fingers entirely both from the eye and the eyelid.

It may here be objected, that in consequence of the upper lid being left without support, it will naturally fall. But although this takes place to a certain degree, a sufficient space will still be left to shew the operator the progress of the knife; which, in a gradual but steady manner, should be continued onward, until it has compleatly cut
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its way through the inferior part of the cornea, as near as possible to the attachment of this tunic to the tunica sclerotica. In the subsequent parts of the operation, the upper eyelid may be raised by the fingers of the left hand of the operator with much more ease, and with much greater accommodation to the involuntary action of the eyelid, (which in some cases is very considerable, and in not a few has suddenly and dangerously forced out the cataract,) than it can be by any assistant whatever. Whilst the upper lid is thus supported by the fingers of the left hand of the operator, the middle finger of his right hand is fully sufficient to depress the lower lid; and with the thumb and fore-finger of this right hand, the curette, or any other instrument that is required, may be held and applied to the eye with perfect steadiness and freedom.

ON THE
INTRODUCTION
OF THE
MALE CATHETER.

Read before the Medical Society of London,
Sept. 8th 1788.

THE introduction of the male catheter, in suppressions of urine, often supplies the only remaining means for the preservation of life. It becomes, therefore, an object of very considerable importance; and in the following paper I propose to lay before the society such remarks as have occurred to me on this subject.

In the first place, it appears to me not a little extraordinary, that the curvature of the catheters, which are represented in many books of surgery, and also of those which are
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usually fold at the instrument-makers, should differ so much, as I find they do, from that of the sound, that is used in searching for the stone.

If, as a modern author of acknowledged merit informs us *, the curvature of the sound he represents, be taken exactly from the natural curvature of the urethra, and be most proper for its introduction into the bladder; that curvature, I should imagine, would be most suitable for the catheter also. This instrument, however, is, in general, curved very differently from sounds; and the catheter, recommended by the author himself, a representation of which is given in plate 15, vol. ii. is curved quite different from his sounds, represented in plate xii. of the same volume. The curvature of the staff, for directing the gorget into the bladder, in lithotomy, is required to be large; and, perhaps, larger than that of the other instruments I have mentioned, in order that it may prove a more certain guide; in conducting the

* See Bell's System of Surgery, vol. ii. p. 34.

knife through the integuments in perinæo. But this is a use to which neither sounds nor catheters are applicable; and therefore, unless the largeness of the curvature renders the introduction of these instruments into the bladder more easy, it does not appear requisite in either of them.

It may probably be urged, that the sound requires a considerable curvature, in order that a large portion of it may be introduced into the bladder; and thus, in searching, when the stone is small, the chance of striking on it may be greater, than when the curvature is less. But I am very doubtful, whether a larger portion of the sound can be introduced when its curvature is great, than when it is small; and, besides this, the stone naturally falls to the bottom of the bladder, and this is a part of it which may be reached without any extraordinary curvature of the instrument. Besides which, the apex or inner termination of the sound admits of considerable motion, by raising or depressing its handle; and therefore it may, by this method, in most

cases, be carried into contact with any body that is lodged in the bladder.

It is, however, necessary for me to add, that as the curvature of the sound is sometimes too large; that of the catheter, on the contrary, is often made much too small; and I have several times been disappointed in the attempt to introduce such an instrument, when I have afterwards succeeded with a catheter, whose curvature was larger.

The translator of *Monf Le Dran's Treatise on the Operations of Surgery*, observes, page 219, "that the curvature of the catheter should be proportionable to the make of the patient; and that this may be guessed at sight." I am at a loss to understand the meaning of this sentence, if any thing more is intended by it, than that the curvature of the catheter should be varied according to the size of the person on whom it is to be used. And this appears to have been the meaning of *Le Dran* himself, since the original words, "*grandeur du malade **," may, I think, more

* *Traité des Operations de Chirurgie*, par H. F. le Dran, p. 288.

properly be translated, "size of the patient," than "make of the patient." The curvature of the urethra, in persons whose size is similar, is, in general, I believe, nearly alike; and when the size varies, as in the case of a boy and a man, I am disposed to think, though the several parts are larger in the latter than in the former, that the curvature is still similar. Heister seems to have been of this opinion, and, in plate xxvii, he gives a representation of a number of catheters, differing in length and thickness; but in all of these the same curvature is preserved in proportion to their respective lengths.

Some surgeons have shaped their sounds according to the shape of the large curvature of the urethra; but this does not seem to furnish a certain rule for the construction either of sounds or catheters; since the difficulty that occurs in introducing them does not arise from the want of such conformity, but from the opposition these instruments meet, when their apex, or inner termination, reaches the end of this curvature, and has to pass a small curvature of the urethra, which lies

under the symphysis pubis, at the entrance into the bladder

Le Dran observes, that the size of the catheter should be suited to the size of the urethra; and that this is to be determined by the size of the orifice in the glans penis*. I have, however, often found the orifice of the urethra in the glans penis much contracted; and yet the urethra, in its whole length afterwards, has been of its full natural size. Le Dran adds a remark, which I believe is universally admitted to be just, “that a pretty large catheter always passes better than a small one.”

As to the length of the catheter, these instruments are generally made much shorter than sounds. In the latter, indeed, the additional length affords a considerable advantage to the surgeon, enabling him to move it about in the bladder, in search of a stone, with much more ease than he could do, if it were shorter. But the necessity is not the

* *Traité des Operations de Chirurgie*, par H. F. le Dran, p. 288.

same, in the use of the catheter. Notwithstanding which, if the length of that instrument were increased to about twelve inches, according to the representation of it on the plate annexed, which is more than an inch above the ordinary length, I believe the facility of using it, would often be in no small degree increased.

The figure, just referred to, is taken from an instrument which I have long made use of myself; and have found it so often to succeed, where others of a different size and curvature have failed, that I beg leave to recommend it to the notice of this society.

With regard to the posture of the patient during the operation, I have performed it at different times when this has been much varied. I have generally found it most convenient for the patient to stand, with his back against the wainscot of the room, and the surgeon to be seated before him. If, however, the patient be very infirm, the operation may be performed either in a sitting or more reclined posture, whichever he

shall find to be most commodious and easy to himself.

The mode in which I pass the instrument, is as follows :

Being first thoroughly oiled, I introduce it into the urethra, with its convex part uppermost, and carry it as far as it will pass, without using force. It is the practice of some surgeons, in doing this, to draw the penis forwards over the catheter ; and Monsr. Le Dran observes *, “ that the great art in “ searching,” and I presume he must mean, there is the same art in drawing off the urine, “ is to keep up a kind of intelligence between “ the hand that supports the penis, and the “ other which directs the instrument.” He adds, “ that they ought to act so in concert, “ that, alternately, the catheter may be “ thrust into the penis, and the penis drawn “ forwards upon the catheter.” In this method, I have repeatedly attempted to introduce the catheter ; but, notwithstanding all the care I could use, my attempts have,

* *Traité par le Dran, p. 290,*

in general, been without success; and I have observed, in various instances, that the attempts of others, in the same way, have been equally unsuccessful. I do not mean, however, by this remark, to convey a doubt of Le Dran's success, according to the method he has described; but since I, and others, have not been so fortunate, as to meet with similar success, I hope I shall stand excused, if I propose a method somewhat different, and which, in my practice, has been more successful. I therefore add, that in a great number of instances, I have scarcely once found it necessary to touch the penis, after the apex of the catheter has been introduced into the urethra: nor will this, I think, appear improbable, when it is considered, that the anterior portion of the urethra, is the only part which can essentially be affected by drawing the penis forward; and this affords no obstacle to the passage of the instrument, unless there be a stricture in it. The posterior part of the urethra, through which, alone, it is difficult to pass the instrument, can neither be straitened nor smoothed by
this

this part of the process. But, besides the objection I have now mentioned to the practice of drawing the penis forward, I shall presently have occasion to observe, further, that the confinement of the catheter, necessarily occasioned by it, is not only unnecessary, but, in a subsequent part of the operation, may also prove injurious.

When the catheter has proceeded as far as it will pass, without using force, I turn it slowly round, so as to bring its concave side uppermost; and, in doing this, I make a large sweep with the handle of the instrument, and, at the same time, keep my attention steadily fixed on its apex, or inner termination; which I take particular care, neither to retract, nor to move from its first line of direction.

In this part of the operation, as well as the former, I differ considerably, both from the directions and practice of many eminent surgeons. Mr. Bromfield *, in particular, di-

* See Bromfield's *Chirurgical Observations*, vol. ii. p. 200.

rects, when the apex of the sound meets with resistance in perinæo, that it be turned round, not *slowly*, as I have directed, but *suddenly*; and, though I do not find the same direction so expressly given by other writers, yet this is the mode I have generally seen pursued by surgeons. Sometimes, when the operators have been experienced men, like the gentleman above-mentioned, it has, without doubt, succeeded in this way, but, in general, and especially when the surgeon has been inexperienced, the operation has failed; and, even with the finger in the rectum, it has not always been rendered successful.

When, again, the apex of the catheter reaches the neck of the bladder, if it does not easily pass in on depressing the handle, Mr. Sharp * recommends to withdraw it a quarter of an inch, and then to introduce the finger into the rectum to raise it; by which method he says it will seldom fail to enter. For my own part, except in those cases where the prostate gland has been

* See Sharp's Treatise on the Operations of Surgery, p. 81.

enlarged, I have rarely had occasion to introduce my finger into the rectum, in performing this operation; and in the direction above given for introducing the instrument, I have mentioned, particularly, that its inner termination should not be permitted to retract, when it reaches the arch of the os pubis. I beg to dwell upon this circumstance, believing it to be essential to the easy introduction of the instrument. On the contrary, whenever I have been inattentive to it, and have allowed the catheter to fall back, I have always been under the necessity of entirely withdrawing it.

But the part of the operation of introducing the catheter, on which, I believe, its success chiefly depends, is the preservation of the apex of the instrument, at the time of turning its concave side uppermost, in the right direction of the urethra; so that it may not then press against the sides of this canal. In order to make my meaning better understood, I will suppose a person to press the apex of a catheter, with its convex side uppermost, against his finger, or any other resisting body.

If

If he turns the instrument suddenly round, so as to bring its concave side uppermost, he will find, unless he uses great care, that its apex will be moved from its place, and take a new direction, different from that which it followed before he made the turn. A similar effect takes place when the instrument is in the urethra; and if in that case, on the turn of the instrument, its apex, instead of pressing strait forward in the urethra, should take its direction against the sides of the canal, no additional pressure, afterwards, can make it advance. For this reason, instead of turning the instrument suddenly, in the way recommended by Mr. Bromfield, I always make the turn slowly, and give the handle of the catheter a large sweep round; and this large sweep of the handle is accomplished much more readily when the instrument is unconfined, than it can be when the penis is drawn forwards over it, in the way recommended by *Monf. Le Dran*.

When the catheter is turned, it must still be pressed onward, and its handle at the same time be gently depressed. By this method it
will

will be made to enter the bladder, and upon removing the stile, the urine of course will be discharged through it.

I scarcely need mention, that previous to the use of a catheter, a bougie should be introduced. This alone, in many instances, has been sufficient to procure the discharge of the urine. I have also not unfrequently succeeded, in drawing off the urine, with a hollow bougie made of elastic gum. But notwithstanding these successes, cases will still often occur, which the catheter alone can relieve. Every hint, therefore, that may tend to render the introduction of this instrument more easy and certain, will, I flatter myself, be thought not unworthy the attention of this society.

F I N I S.

